IFW AF-8

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANT(s):	Rinne et al.		
SERIAL NO.:	09/896,607	ART UNIT:	2143
FILING DATE:	06/29/2001	EXAMINER:	Jean Gilles, Jude
TITLE:	QUALITY OF SERVICE FOR DATA STREAMS		
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APPELLANTS' BRIEF

This is an appeal from the final rejection of the claims in the above-identified application. A Notice of Appeal was mailed on September 12, 2005.

I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is:

Nokia Mobile Phones, LTD.

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II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences regarding this application.

III. STATUS OF CLAIMS

Claims 1-8 are pending in the application.

Claims 1-8 have been finally rejected.

The claims on appeal are 1-8.

IV. STATUS OF AMENDMENTS

There are no outstanding amendments. The last amendment was filed on June 10, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Applicant's invention is directed to a method for applying a certain quality of service to a data stream of an application executing in a terminal device communicating over a sockets connection. (Page 11, lines 3-11; FIG. 1, (2), (3), (4)) The method includes providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data stream from or to the application. (page 10, lines 6-29; page 11, line 23-25; page 12, lines 2-5)

An association is determined between the identifier and a particular QoS policy in a database stored in the terminal device. (page 11, line 29-31; page 12, lines 23-28; page 16, lines 19-21). The QoS parameters contained in the QoS policy

are determined in the terminal device. (page 12, lines 23-25; page 14, lines 6-10). The parameters to be applied to the at least one of the application and the data stream from or to the application are communicated from the terminal device to the network. (page 16, lines 9-12; page 16, lines 21-24)

With respect to claim 2, the method comprises transferring the identifier (UID, Stream Type) over the sockets connection. (page 12, lines 6-10; FIG. 2, (22), (23), (24), (26), (27)).

With respect to claim 3, the method further comprises providing a socket application program interface to the application. (Page 14, lines 6-13; FIG. 5, 34, 43, 44). A socket is established for transfer of the data stream. (page 12, lines 25-28; page 13, lines 19-22). The identifier (UID, Stream Type) is transferred over the socket application program interface to uniquely identify the at least one of the particular application and the particular data stream, which application or data stream is identified by the identifier, in order apply the particular QoS to the data stream being communicated over the sockets connection. (page 12, lines 6-9; FIG. 2 (21)-(28); page 16, lines 1-7; page 16, lines 19-24).

With respect to claim 4, the device includes an application program for executing a particular application; means for communicating data over a sockets connection. (page 16, line 32-page 17, line 2; FIG. 4 (43); Fig. 5). The device also includes means for providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data from or to the application. (page 11, lines 23-29; page 12, lines 2-13, FIG. 2 (21-26)). Means are provided for determining an association between said identifier and a particular QoS

policy in a database stored in said device. (page 11, lines 29-33, FIG. 2 (20) (24)). Means are provided for determining in said device the QoS parameters contained in the QoS policy. (FIG. 2 (P1-P3)). Means are also provided for communicating from said device to the network the QoS parameters to be applied to the at least one of the application and the data stream from or to the application. (page 11, lines 3-11 and 13-18; FIG. 2 (24); page 16, lines 25-29).

With respect to claim 5, the device as claimed includes an application program for executing a particular application. (page 16, lines 32-page 17, line 2; FIG. 4 (43)). Means are provided for communicating data over a sockets connection. (page 16, lines 9-12; FIG. 2 (21) (24). The device also includes means for associating a centrally defined identifier (UID, Stream Type) to, at least one of the application and the data from or to the application. (page 12, lines 2-13; FIG. 2; page 13, lines 2-5; FIG. 3a, 3b). Means are provided for determining an association between the identifier and a particular QoS policy in a database stored in the device. (page 11, lines 29-32; FIG 2 (20), (24); page 13, lines 4-6; FIG. 3a, 3b). Means are provided for determining in the device the QoS parameters contained in the QoS policy. Means are also provided for communicating from the device to the network the QoS parameters to be applied to the at least one of the application and the data stream from or to the application. (page 11, lines 3-11; lines 13-18; page 16, lines 9-12; FIG. 2, (2), (24); page 16, lines 25-29).

With respect to claim 6, the device also includes means for providing a socket application program interface to the

application. (page 12, lines 9-11; FIG. 2 (30); FIG. 3 (34)). Means are provided for establishing a socket for transfer of the data. (page 15, lines 6-9). Means are provided for transferring the identifier (UID, Stream Type) over the socket application program interface to uniquely identify the at least one of the particular application and the particular data, which application or data is identified by the identifier, in order apply the particular QoS to the data being communicated over the sockets connection. (page 16, lines 6-9, FIG. 2 (21-26); page 16, lines 1-7; page 16, lines 19-24; FIG. 3 (a)).

With respect to claim 7, a computer program product for an electronic device having an application to communicate data over a sockets connection is provided. The computer program product comprises computer program means for providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data from or to the application; computer program means for determining an association between the identifier and a particular QoS policy in a database stored in the electronic device; computer program means for determining the electronic device the QoS parameters contained in the QoS policy; and computer program means for communicating from the electronic device to the network the QoS parameters to be applied to the at least one of the application and the data stream from or to the application. (page 17, lines 22-29 FIG. 4)

With respect to claim 8, a computer program product further comprises computer program means for providing a socket application program interface to the application, computer program means for establishing a socket for transfer of the data, and computer program means for transferring the identifier

(UID, Stream Type) over the socket application program interface to uniquely identify the at least one of the particular application and the particular data, which application or data is identified by the identifier, in order apply the particular QoS to the data being communicated over the sockets connection. (page 7, lines 22-29, FIG. 4; FIG. 5)

VI. ARGUMENT

Claim 1 is not anticipated by Jackowski because Jackowski does not disclose or suggest each feature of Applicant's invention as recited in the claims.

In Applicant's invention, an association is determined between the identifier and a particular QoS policy in a database stored in the terminal device. This is not disclosed or suggested by Jackowski.

Jackowski discloses a system for policing traffic in an IP network, which comprises a number of workstations, an edge server and a policy server. In the system an extensible service provider interface is placed between the winsock-API used by an application and the IP protocol stack in any of the workstations (col. 7, rows 58-col. 8, line 6.) The workstations may be client or server type of workstations. To the extensible service provider interface may be attached a number of plug-in programs. One such plug-in program is an application-classifier plug-in (ACE) (col. 8, lines 22-56). The application-classifier plug-in collects network statistics for packets originating from or received by a workstation. The application-classified plug-in program provides an event notification service for a

controller application (col. 9, lines 37-49). The application-classifier plug-in provides the controller with notifications on events such as the starting and stopping of applications, the opening of sockets, the connecting of sockets, the writing and read of a socket, and the closing of sockets. The format of the event notifications is illustrated in Figures 7A-7E. The controller is also informed of a process identifier and the name of the application associated with the process identifier. The application-classified plug-in obtains the name of the application associated with the process identifier (col. 10, lines 63-67). The controller forms tables, the format of which is illustrated in Figures 9A and 9B.

The system taught by Jackowski comprises a separate policy server (col. 15, lines 20-43) that collects statistics of network traffic from the workstations. The policy server is responsible for assigning priorities to flows originated or terminated by the workstations. The policy server is provided information on flows that are associated with the given source and destination addresses and TCP-ports via the edge server (col. 15, lines 23-35). The policy server obtains information on the applications that are associated with these flows and statistical information collected via the application-classifier plug-in and the controller in a workstation (col. 15, lines 23-35). The policy server compares the consumed capacity to acceptable threshold values. If the threshold values have been exceeded, the policy server instructs the edge server to regulate the traffic by delaying or dropping packets (col. 15, lines 36-52).

In the solution taught by Jackowski, the QoS determination based on the application is made in an external policy server so that the connection from the workstation to a remote server is made first. The actual policing will be performed afterwards by comparing the traffic statistics associated with the application to threshold value (col. 15, lines 35-39). Further, the policy server acquires flow data from the workstations.

Jackowski does not teach determining the association between the identifier and a particular QoS policy in a database stored in the terminal device.

Col. 10, lines 55-67 referred to by the Examiner does not teach determining as association between an identifier and a particular QoS policy. This portion of Jackowski relates to a data-object definition. Each object definition includes a unique process identification. (Col. 10, lines 58-60).

Col. 11, lines 1-37 refer to further data-object definitions, with reference to FIGS. 7B-7D.

Col. 14, lines 11-25, refer to "policy control." Statistics of network traffic is collected. The "application-classifier" plugin 51 provides information for policy control applications in a policy server. (Col. 14, lines 2-4). The application-classifier plugin sends the collected statistics to a server.

While these sections discuss "identifiers" and "policy" control, what is not taught in Jackowski is "determining" an "association" between an "identifier" and a "particular" QoS policy".

In Jackowski, the actual QoS is obtained in the separate policy server (col. 15, lines 35-39). The policy server 18 finds "band-with hogging" applications. The controller application in the workstation collects statistical information pertaining to a given application such as average, minimum and maximum data rates, but the actual comparing of these values to acceptable thresholds is performed in the policy server (col. 15, lines 35-39). However, this is not the same as determining an association between an identifier and a particular QoS policy as is claimed by Applicant. The passage cited by the Examiner refers merely to the event notification formats. The mere statistics collected may not be pertinently referred to as a QoS policy.

Thus, at least this feature is not disclosed or suggested by Jackowski.

Jackowski also does not disclose or suggest determining, in the terminal device, the QoS parameters contained in the QoS policy.

FIG. 12, referred to by the Examiner, relates to a network using policy rules. (Col. 15, lines 21-23). The plug-in "enable policy controls" to be implemented. (Col. 15, lines 14-15). For example, edge device 14 may examine packets and apply policy rules. (Col. 15, line 49-51). However, this is not the same as what is claimed by Applicant. Jackowski fails to disclose that the QoS parameters are determined in the terminal device. As explained above, Jackowski teaches that acceptable threshold values are obtained only in the policy server. The passage cited by the Examiner for this feature only discloses that the policy server acquires the traffic statistics from the workstations and may instruct an edge device to block or delay

packet for flows originating from certain applications (col. 15, lines 14-62). The policy server is not a terminal as is described and claimed by Applicant.

Thus, this feature is also not disclosed or suggested by Jackowski.

Jackowski also doe not disclose or suggest communicating from the terminal device to the network the QoS parameters to be applied to the at least one of the application and the data stream from or to the application. In Jackowski, the terminal does not communicate the QoS parameters, which are to be applied for an application or a data stream of a given application, to the network.

Col. 10, lines 10-39 discusses the transfer of objects and such data transfers. There is no mention here of communications QoS parameters to be applied.

Col. 15, lines 14-63, discussed previously, also does not teach communication QoS parameters as recited by Applicant in the claims.

Thus, this feature of Applicant's invention is also not disclosed or suggested by Jackowski.

It is also submitted that Jackowski does not disclose or suggest providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data stream from or to the application. In Jackowski, the unique identifier is a process identifier (FIG. 7B). As an expert of the field would appreciate, a process identifier does not reveal the actual application executing as that process. For example, there may

be several instances of an application executing in parallel. Each has a unique process identifier, which does not reveal the actual underlying application. The application name must be obtained separately using the process identifier. A process identifier may be later on assigned to an instance of a different application.

Further, the lack of a uniquely identifiable identifier is also evident from Jackowski (col. 15, lines 59-63), wherein low-priority web browsing from client can be identified by finding the application name in the flow tables for the IP address for client and port used by the browser. However, an expert in the field would appreciate that an application name is not a uniquely identifiable identifier, because the application name is unique only with a certain probability. The implementation relies on the fact that rarely are there two actually different applications with the same executable file name, even when considering a number of different hosts. Nothing prevents two applications to be named similarly in order to cheat the bandwidth allocation scheme taught by Jackowski.

Thus, Jackowski does not disclose or suggest this feature of Applicant's invention as claimed.

In summary, in Jackowski, the QoS determination based on the application is made in an external policy server so that the connection form the workstation to a remote server is made first. The actual policing will be performed afterwards by comparing the traffic statistics associated with the application to threshold values. Further, the policy server acquires flow data from the workstations. However, in Applicant's invention as claimed, the device itself determines an association between

the application identifier and a particular QoS policy in a database stored in the device itself. The QoS parameters contained in the QoS policy are determined in the device and the QoS parameters to be applied to the at least one of the application and the data stream from or to the application are communicated from the device to the network.

One of the benefits of Applicant's invention as claimed is that it guarantees compatibility to systems where even the initial setting up of a communication path requires knowledge of the QoS. The QoS is required in the communication path establishment procedure. The solution taught by Jackowski is essentially based on statistics collected **after** the communication path has been used for some time. This is different from Applicant's invention where the QoS is required in the communication path establishment procedure. In Jackowski, without having the communication path established no data is sent. Thus, no flow information will ever be received in the edge server.

Thus, claim 1 is not anticipated by Jackowski.

Claims 4, 5, and 7 recite subject matter similar to that recited in claim 1. For the reasons stated above, claims 4, 5, and 7 are also not anticipated by Jackowski.

Claims 2, 3, 6 and 8 are also not anticipated by Jackowski at least by reason of their respective dependencies.

A check in the amount of $500 is enclosed herewith for the appeal brief fee. The Commissioner is hereby authorized to charge payment for any additional fees associated with this

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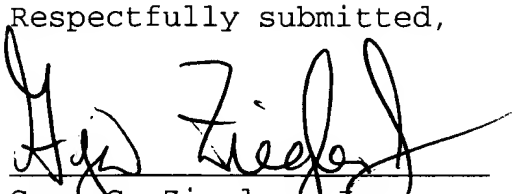
Respectfully submitted,



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VII. CLAIM APPENDIX

The texts of the claims involved in the appeal are:

1. (Previously Presented) A method for applying a certain Quality of Service (QoS) to a data stream of an application executing in a terminal device communicating data over a sockets connection, wherein the method comprises:

providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data stream from or to the application;

determining an association between said identifier and a particular QoS policy in a database stored in said terminal device;

determining in said terminal device QoS parameters contained in the QoS policy; and

communicating from said terminal device to the network the QoS parameters to be applied to said at least one of the application and the data stream from or to the application.

2. (Original) A method according to claim 1, wherein the method comprises transferring the identifier (UID, Stream Type) over the sockets connection.

3. (Original) A method according to claim 1, wherein the method further comprises

providing a socket application program interface to the application,

establishing a socket for transfer of the data stream, and

transferring the identifier (UID, Stream Type) over the socket application program interface to uniquely identify said at least one of the particular application and the particular data stream, which application or data stream is identified by the identifier, in order apply the particular QoS to the data stream being communicated over the sockets connection.

4. (Previously Presented) A device comprising;

an application program for executing a particular application;means for communicating data over a sockets connection, wherein the device further comprises;

means for providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data from or to the application;

means for determining an association between said identifier and a particular QoS policy in a database stored in said device;

means for determining in said device the QoS parameters contained in the QoS policy; and

means for communicating from said device to the network the QoS parameters to be applied to said at least one of the application and the data stream from or to the application.

5. (Previously Presented) A device comprising:

an application program for executing a particular application;

means for communicating data over a sockets connection, wherein the device further comprises;

means for associating a centrally defined identifier (UID, Stream Type) to, at least one of the application and the data from or to the application;

means for determining an association between said identifier and a particular QoS policy in a database stored in said device;

means for determining in said device the QoS parameters contained in the QoS policy; and

means for communicating from said device to the network the QoS parameters to be applied to said at least one of the application and the data stream from or to the application.

6. (Original) A device according to claim 4, wherein the device further comprises

means for providing a socket application program interface to the application,

means for establishing a socket for transfer of the data, and

means for transferring the identifier (UID, Stream Type) over the socket application program interface to uniquely identify said at least one of the particular application and the particular data, which application or data is identified by the identifier, in order apply the particular QoS to the data being communicated over the sockets connection.

7. (Previously Presented) A computer program product for an electronic device having an application to communicate data over a sockets connection, wherein in that the computer program product comprises;

computer program means for providing a uniquely identifiable identifier (UID, Stream Type) to at least one of the application and the data from or to the application;

computer program means for determining an association between said identifier and a particular QoS policy in a database stored in said electronic device;

computer program means for determining said electronic device the QoS parameters contained in the QoS policy; and

computer program means for communicating from said electronic device to the network the QoS parameters to be applied to said at least one of the application and the data stream from or to the application.

8. (Original) A computer program product according to claim 7, wherein the computer program product further comprises

computer program means for providing a socket application program interface to the application,

computer program means for establishing a socket for transfer of the data, and

computer program means for transferring the identifier (UID, Stream Type) over the socket application program interface to uniquely identify said at least one of the particular application and the particular data, which application or data is identified by the identifier, in order apply the particular QoS to the data being communicated over the sockets connection.

IX. EVIDENCE APPENDIX

N/A

X. RELATED PROCEEDINGS APPENDIX

N/A